

CLAIMS

What is claimed is:

1. A device for determining the position of a tool and/or a load-bearing machine component of a machine tool or production machine, comprising:
a primary crossbeam disposed between two movable support elements and supporting the tool or the machine component,
a rigid secondary crossbeam supported between the support elements; and
a contactless measuring unit connected with the primary crossbeam and constructed to measure a deflection of the primary crossbeam relative to the secondary crossbeam.
2. The device of claim 1, wherein the deflection is dependent on at least one of an acceleration force, a weight and a processing force exerted on the tool or the machine component.
3. The device of claim 1, wherein the secondary crossbeam has a stiffness perpendicular to a travel direction of the tool or the machine component that is greater than a stiffness of the primary crossbeam.
4. The device of claim 1, wherein the secondary crossbeam is made of a carbon composite.

5. The device of claim 1, wherein the measuring unit is arranged in close proximity to the tool or the machine component.
6. The device of claim 1, wherein the measuring unit is constructed as a measuring instrument using laser triangulation.
7. The device 1, wherein the measuring unit emits a laser beam for measuring a distance between the primary and secondary crossbeams.
8. The device of claim 1, wherein the secondary crossbeam includes a metallic surface, with the measuring unit being constructed for inductive or capacitive measurement.